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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,535

07/17/2006

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EXAMINER

REDDY, KARUNA P

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

05/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,535	<b>Applicant(s)</b> SASAKI ET AL.	
	<b>Examiner</b> KARUNA P. REDDY	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 12 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 is/are allowed.
- 6) ☒ Claim(s) 1 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/6/2008</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/6/2008 has been entered.

Claims 1 and 12 are amended; claims 2-11 and 13-16 are cancelled; and claim 17 is added.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 17 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4-11 of copending Application No. 10/539,188. Although the conflicting claims are not identical, they are not patentably distinct from each other because both are directed to deuteration of tricyclo[5.2.1.0<sup>2,6</sup>]decan-8-ol in the presence of an activated palladium catalyst in deuterium oxide as a solvent. The activated catalyst is obtained by contacting the Pd catalyst with hydrogen gas.

Copending claims are silent with respect to activation of Pd catalyst with hydrogen gas during the deuteration process.

However, applicants' attention is drawn to MPEP 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. (underlining added by examiner for emphasis) *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

Consistent with the above underlined portion of the MPEP citation, attention is drawn to page 12, lines 27-32 of the specification of copending application wherein it teaches that deuteration may be carried out using a catalyst activated in advance or activation of a catalyst and deuteration of a reactive substrate may be carried out simultaneously in the presence of a non-activated catalyst and hydrogen gas in the deuteration reaction system. Therefore, it would have been obvious to activate Pd catalyst with hydrogen gas during deuteration process.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claim 17 is directed to an invention not patentably distinct from claims 1 and 4-11 of commonly assigned 10/539,188. Specifically, see the discussion set forth in paragraph 4 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 10/539,188, discussed above, would form the

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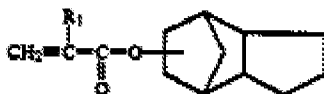
basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

***Claim Rejections - 35 USC § 103***

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai et al (US Re 34,061 - is the same as EP 1 41610 A) in view of Koike (US 5, 767, 200).

Kawai et al discloses a compound (tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-yl (meth)acrylate) of the following formula (column 2, lines 63-68) wherein R<sub>1</sub> is a hydrogen or a methyl group.



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A polymer excellent in transparency, moisture resistance, heat resistance and one which is suitable as a material for optical elements is obtained by polymerizing the above mentioned compound i.e. tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-yl (meth)acrylate (abstract).

Kawai et al is silent with respect to deuteration of tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-yl (meth)acrylate; and process of making deuterated tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-yl (meth)acrylate.

However, Koike et al teach that optical absorbance attributable to expansion and contraction of the C-H bond interferes with absorbance peak wavelength in some cases and coincides with the operating wavelength of an optical device. The 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> harmonics with an absorbance at 901 nm, 736 nm, 627 nm and 549 nm respectively fall within the wavelength region which is mainly used in the optical communication field. Where the C-H bond of molecules is replaced by C-D bond, the above-mentioned peaks disappear. The threshold transmission loss values are drastically improved compared with the case of C-H bond (column 11, lines 14-61). Therefore, it would have been obvious to one skilled in the art at the time invention was made to replace the hydrogen atoms of C-H bond, in tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-yl (meth)acrylate of Kawai et al, with deuterium i.e. heavy hydrogen for forming optical members with desirable transparency or transmittancy in the operating wavelength of an optical device.

With respect to the process of deuterating tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-yl (meth)acrylate, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re*

*Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) and *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takase et al (US 2003/0021943 A1) in view of Koike (US 5, 767, 200).

Takase et al disclose a compound i.e. monofunctional monomer that can be used as an optical component (paragraph 0031). As examples of commercially available products of the monofunctional monomers FA-511A and FA-513A can be given (paragraph 0034). It is noted that FA-511A and FA-513A are tricyclo[5.2.1.0<sup>2,6</sup>]decenyl acrylate and tricyclo[5.2.1.0<sup>2,6</sup>]decyl acrylate respectively.

Takase et al is silent with respect to deuteration of tricyclo[5.2.1.0<sup>2,6</sup>]decyl acrylate and tricyclo[5.2.1.0<sup>2,6</sup>]decenyl acrylate.

However, Koike et al teach that optical absorbance attributable to expansion and contraction of the C-H bond interferes with absorbance peak wavelength in some cases and coincides with the operating wavelength. The 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> harmonics with an absorbance at 901 nm, 736 nm, 627 nm and 549 nm respectively fall within the wavelength region which is mainly used in the optical communication field. Where the C-H bond of the molecules of optical resin material is replaced by C-D bond, the above-mentioned peaks disappear. The threshold transmission loss values are drastically improved compared with the case of C-H bond (column 11, lines 14-61). Therefore, it would have been obvious to replace the hydrogen atoms of C-H bond, in tricyclo[5.2.1.0<sup>2,6</sup>]decyl acrylate and tricyclo[5.2.1.0<sup>2,6</sup>]decenyl acrylate of Takase et al, with deuterium i.e. heavy hydrogen for forming optical members with desirable transparency or transmittancy in the operating wavelength of an optical device.



With respect to the process of deuterating the monomer, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) and *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

***Allowable Subject Matter***

8. Claim 12 is allowed is allowed for the following reason -

It is noted that the present claim 12 is amended to recite a specific process involving deuteration under an atmosphere of light hydrogen gas. The closest prior art, viz., Takase et al (US 2003/0021943 A1), Koike (US 5, 767, 200), Kato et al (US 4, 874, 890), and Kawai et al (US Re 34,061 - is the same as EP 1 41610 A), taken individually or in combination, does not disclose or suggest deuteration of tricyclo[5.2.1.0<sup>2,6</sup>]decyl (meth)acrylate in the presence of palladium catalyst, under an atmosphere of hydrogen gas, in deuterium oxide as a solvent. Thus, Takase et al teach polymers made from tricyclo[5.2.1.0<sup>2,6</sup>]decyl (meth)acrylate; Kawai et al teach polymers made from tricyclo[5.2.1.0<sup>2,6</sup>]decyl (meth)acrylate and the process of making the monomer by condensation reaction of tricyclo[5.2.1.0<sup>2,6</sup>]deca-8-ol with (meth)acrylic acid chloride, Koike et al teach optical resin material wherein it is desirable to have high transparency i.e. transmittancy in the operating wavelength of an optical device which can be

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accomplished by deuteration, and Kato et al teach deuteration of methyl methacrylate in the presence of Pd catalyst using heavy water i.e. deuterium oxide as a source of deuterium sans hydrogen gas.

Furthermore, while the reference of Hirota et al (US 2005/0177015) does teach all the process steps of present claims i.e. deuteration is accomplished using non-activated Pd carbon in the presence of hydrogen gas, in deuterium oxide as solvent (paragraph 0027-0028 and 0031), date is not valid for a proper rejection under 35 U.S.C. § 102.

### ***Response to Arguments***

9. Applicant's arguments, filed 5/6/2008, with respect to rejection of claims 1, 12 and 17 have been considered but are moot in view of the amendments, and further in view of new grounds of rejection for claims 1 and 17; and indication of allowable subject matter for claim 12.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karuna P Reddy/  
Examiner, Art Unit 1796

/VASUDEVAN S. JAGANNATHAN/  
Supervisory Patent Examiner, Art Unit 1796